

## ABSTRACT OF THE DISCLOSURE

A virtual reality system transposes a user's position and movement in real space to virtual space. The virtual reality system includes a locomotion interface that outputs signals indicative of a user's position in real space. The locomotion interface includes a pressure-sensing mat having a base layer, a plurality of pressure sensing elements formed over the base layer, a top layer formed over the plurality of pressure-sensing elements, and an input interface formed between the base layer and the top layer. The locomotion interface further includes a base around which the pressure sensing mat is disposed, the base structure being fixed in a first position but freely moveable in a second position. The plurality of pressure sensing elements output a signal indicative of pressure applied to the top layer. A virtual reality processor uses the signals output by the locomotion interface to produce an output indicative of the user's position in the virtual space corresponding to the user's position and movement in the real space. A display uses the output from the virtual reality processor to produce an image of the virtual space.